



Education for Sustainable Development Goals: Qualitative Review of Emerging Concepts and Opportunities for HEI

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Abstract

Integrating Education for Sustainable Development Goals (ESDG) into higher education institutions (HEIs) is increasingly crucial for addressing global sustainability issues. The United Nations' Sustainable Development Goals (SDGs) provide a simplified roadmap for a sustainable future. HEIs are essential to nurturing the expertise, skills, and values needed for sustainable development. Achieving the SDGs depends on leveraging research, fostering innovation, and promoting sustainable education. This paper offers a qualitative analysis of the changes in HEIs related to Education for the Sustainable Development Goals (ESDG). The research identifies critical emerging concepts and innovative practices reshaping educational approaches to align with the SDGs by reviewing recent literature. It also examines the opportunities that HEIs face in implementing the ESDGs, emphasizing the importance of innovation, curriculum revision, and institutional collaborations. The study uses a systematic qualitative academic literature review to explore emerging concepts and opportunities in Education for Sustainable Development Goals (ESDG) in HEIs from 2020 to 2024. Data will be collected from academic databases such as Scopus, Springer, and Google Scholar and systematically analysed using Atlas.ti to identify key themes related to institutional strategies, technology integration, challenges, and opportunities in ESDG. The literature reviewed highlights the importance of collaborative partnerships, technological advancement, and innovation, as well as implementing technological programs within HEIs to integrate ESDG efficiently and effectively. This paper significantly adds to the current understanding of sustainable development in education by thoroughly examining the recent advancements in ESDG. Furthermore, the study offers actionable suggestions for Higher Education Institutions (HEIs) to improve their sustainable education programs.

Keywords: Sustainable Development Goals, Education, Higher Education Institutions

1. Introduction and Background

In the 21st century, the role of HEIs has become increasingly vital in preparing individuals to contribute meaningfully to sustainable development. This mission is particularly urgent in South Africa due to persistent socio-economic disparities and the legacy of historical injustices. Despite significant progress since the democratic transition in 1994, South Africa still grapples with high poverty levels, unemployment, and inequality [9,19]. HEIs must advance knowledge through research and scholarship and contribute to socio-economic development and nation-building [6]. They possess the intellectual capital, research infrastructure, and human resources necessary to address the country's development challenges. Therefore, exploring the concepts that guide how HEIs can promote the SDGs is essential. This research paper aims to review and present emerging concepts on how HEIs integrate education for the SDGs. By doing so, it seeks to enhance the discourse on the role of higher education in addressing complex societal challenges and fostering inclusive and sustainable development.



2. Literature Review

2.1 Overview of SDGs

The Sustainable Development Goals (SDGs) are a call to action by the United Nations to address poverty, protect the planet, and promote peace and prosperity by 2030 [30]. Adopted by all United Nations Member States in 2015 as part of the 2030 Agenda for Sustainable Development, the SDGs represent an ambitious framework for addressing the world's most pressing social, economic, and environmental challenges. The figure below shows the 17 goals:

Figure 2.1 Sustainable Development Goals



Source: (UNDP, 2015)

According to [18], achieving the SDGs calls for a concentrated effort to advance research and innovation in several sectors and to support sustainable education initiatives. These efforts are essential for tackling global issues and generating long-term benefits for communities and the environment. Given their role in society, HEI can play an important role in facilitating the implementation of SDGs.

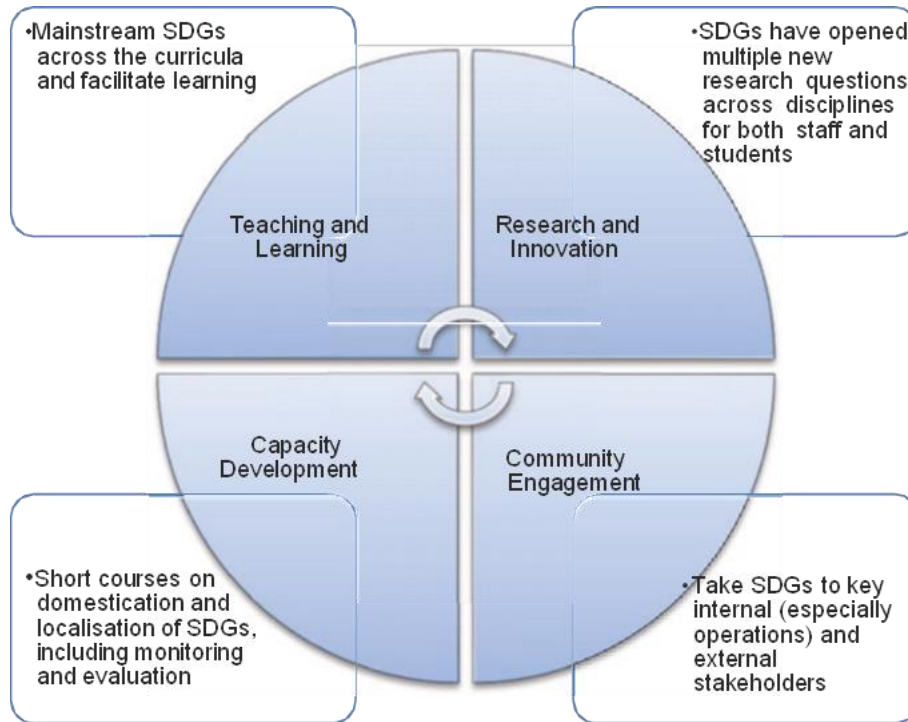
2.2 Role of Higher Education in Advancing SDGs

There has been an increase in the global community's growing awareness of pressing environmental, social, and economic concerns [35]. Thus, the role and importance of HEI have been highlighted in the literature. The UN's recognition of the importance of education in achieving the SDG lays a great deal of responsibility on African HEIs for how they can better support sustainable development to guarantee that the SDGs are achieved [27]. There are various ways that HEIs can contribute to achieving the SDGs. According to [20], HEIs can incorporate SDGs in research, teaching, learning, and community engagement. This can include conducting research addressing intricate environmental, social, and economic issues. Their research can contribute to the global body of knowledge on sustainability and drive innovation for sustainable development. HEIs can also integrate the goals into their curriculums [2]. This will increase students' awareness and give them the information and abilities to deal with global sustainable development issues. HEIs can promote a



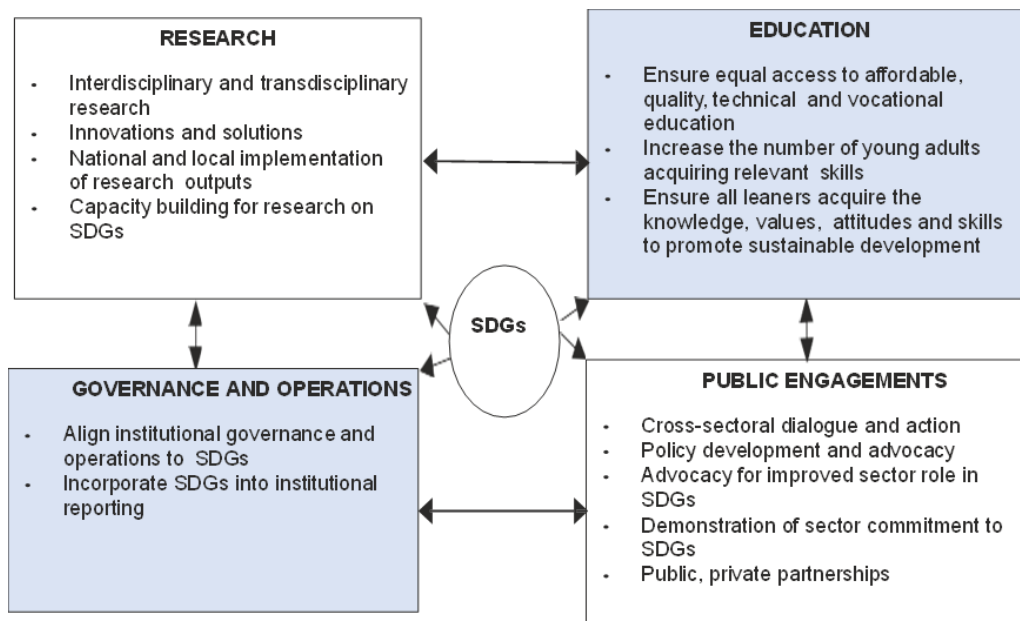
greater understanding of and dedication to sustainable development by combining case studies and real-world applications linked to the SDGs. Furthermore, the HEI can also incorporate the SDGs into their governance and operations [36]. The figures below illustrate the various ways in which HEIs can play a role in achieving the SDGs:

Figure 2.2 How HEIs can promote ESDG



Source (Nhamho & Mjimba, 2020)

Figure 2.3 Role of HEIs in achieving SDGs





Source: Zhou, Rudhumbu, Shumba, & Olumide, 2020)

3 Methodology

This study uses a qualitative systematic review approach to systematically review the emerging concepts for Education for Sustainable Development Goals (ESDG) within HEIs [3]. The study focused on a desktop qualitative review of academic literature. This approach allows for a comprehensive understanding of complex phenomena and the exploration of detailed insights within the context of ESDG based on academic literature. By focusing on this approach, the research aims to capture the diversity of perspectives, practices, and concepts encountered in implementing SDGs in HEIs.

3.1 Data Collection

To conduct a comprehensive analysis, the researchers selected three academic databases: Semantic Scholar, Scopus, Web of Science, Springer, and Google Scholar. These databases were chosen for their coverage of peer-reviewed literature and relevance to educational research. To capture different perspectives, the researchers used a search engine strategy with keywords such as "Education for Sustainable Development Goals (ESDG)," "ESDG in higher education institutions (ESDGHEI)," "Concepts for ESDG in higher education (CE)," and "ESDG implementation in HEI (ESDGIM). The search focus refined the search by focusing on publications from the 2020 to 2024 period to ensure the inclusion of the most recent and relevant studies. After conducting searches, the researchers used the retrieved articles' titles, abstracts, and keywords to determine their relevance. The researchers established inclusion criteria to select empirical research theoretical papers that specifically addressed ESDG in the context of higher education institutions. After removing duplicates, the researchers thoroughly examined the full text of the remaining publications to ensure they were still relevant to the study topics. The final dataset consisted of reputable sources offering a range of viewpoints on ESDG in higher education. The chosen articles were then imported into Atlas.ti, a qualitative data analysis program, to facilitate thematic analysis and systematic coding.

3.3 Data Analysis

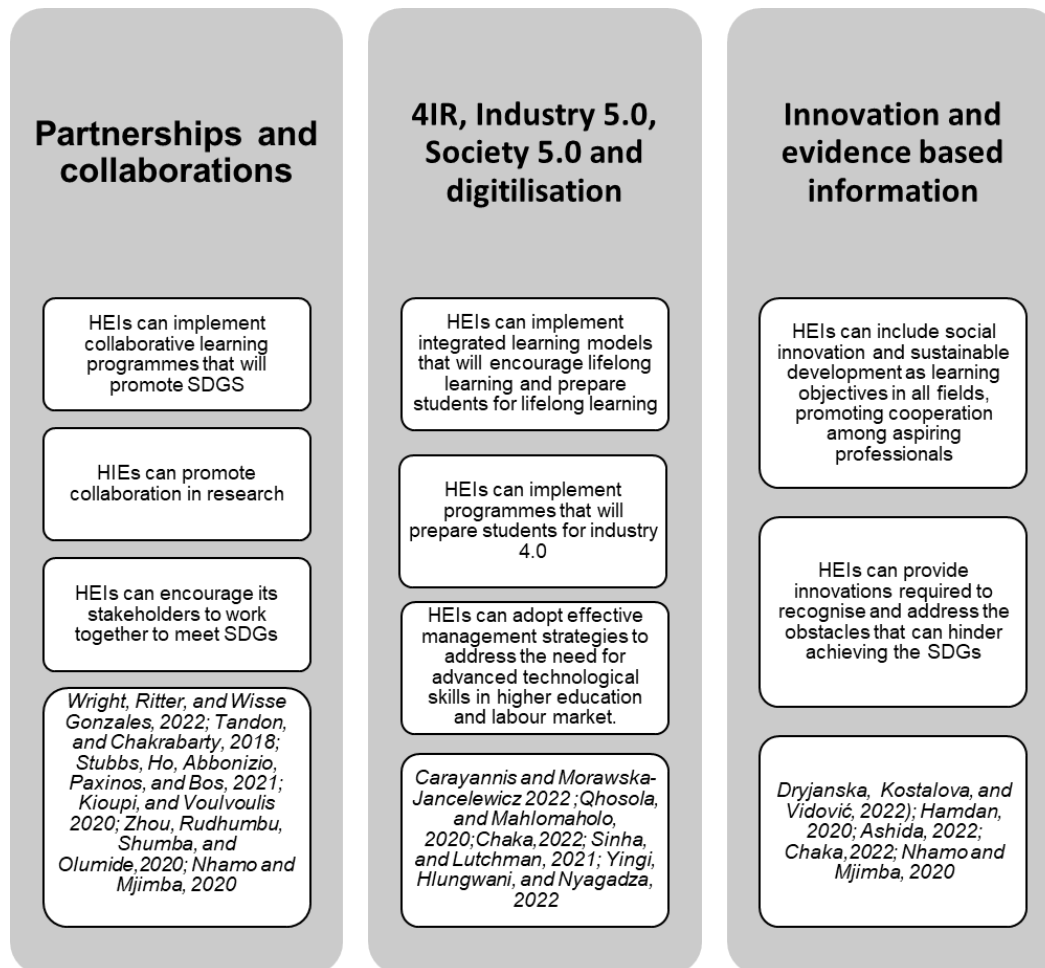
Atlas ti was used to analyse the data, and the data was coded using an inductive approach, allowing themes to emerge organically from the content of the articles [12]. Thematic analysis was conducted to identify and categorise critical concepts related to ESDG implementation in HEIs [21]. This process involved iterative coding cycles, theme development, and refinement to ensure a thorough understanding of the data. Additionally, the study examined institutional factors influencing the successful integration of ESDG into curricula and the engagement of various stakeholders. The resulting themes provide a comprehensive overview of the current concepts relating to ESDG in higher education.



3 Results

Various concepts emerged from the data. However, the researchers summarised the fundamental concepts as follows as follows:

Figure 4.1 Concepts and opportunities to achieve SDGs in HEIs



Source: Researcher's own

Partnership and collaborations

Studies have highlighted the importance of collaborations and partnerships in achieving the SDGs [32,28,26]. This means that all elements of society must work together and contribute to the SDGs to fulfill the targets. The last fifty years have seen a shift in Sustainable Development work that requires a more collaborative culture, which HEIs have yet to have [32]. The HEI's organisational structures have historically supported disciplinary-based research and instruction; as a result, new structures and procedures are needed to bridge disciplinary divides and improve the likelihood of conducting research with partners outside of academia [15]. Higher education institutions (HEIs) can facilitate knowledge transfer and skills and provide sustainable social services by forming partnerships and collaborations. In Africa specifically, HEIs should work on aligning with global market needs to achieve SDG 4 on quality education, promote mobility in Africa, and foster partnerships with industry stakeholders to address labor market demands [17].



4IR, Industry 5.0, Society 5.0 and digitalisation

The demand for advanced technological skills in higher education and labor markets is growing, and HEIs must adopt effective management strategies to address these challenges [22]. This can be achieved by implementing programs incorporating technology to achieve quality education (SDG4) and considering the principles of Society 5.0. Society 5.0 aims to enhance the quality of life for all individuals through a highly advanced society that leverages the potential of technology [10]. This concept seeks to improve people's well-being by harnessing the productive and technological capabilities of Industry 4.0 [23], which is the catalyst to meet SDGs [25]. For example, during COVID-19, disruptive innovations were essential to ensuring that society continues to operate. The SDGs may be actively supported by Society 5.0 through the fostering of wealth, eradicating poverty, and safeguarding the environment [24]. To foster sustainable development in various areas of society, including education, health, democracy, and the economy, individuals need to cultivate positive and constructive relationships with technology [8]. [4] recommend that HEIs develop new methods and channels for distributing education, research, and innovation within the context of Society 5.0, which will foster socially and digitally engaged education models.

Innovation and evidence-based information

There are also strong expectations in the 2030 Agenda that innovation would be essential to achieving the SDGs. HEIs are considered significant contributors to providing evidence-based approaches, and their innovations are required to recognise and address the obstacles that can hinder achieving the SDGs [1]. In higher education, social innovation and sustainable development ought to be included as learning objectives in all fields, promoting cooperation among aspiring professionals, such as, for example, pop-up hubs in rural areas and research projects that are action-based, innovative entrepreneurship [7,11].

5. Conclusion

Integrating Education for Sustainable Development Goals (SDGs) within (HEIs) requires a varied approach emphasising collaboration, technological advancement, and innovation. The reviewed literature underscores the importance of partnerships and interdisciplinary structures to bridge existing divides and foster a collaborative culture essential for sustainable development. As the demand for advanced technological skills grows, HEIs must adopt effective strategies to incorporate Industry 4.0 and Society 5.0 principles, enhancing educational quality and societal well-being. Furthermore, innovation and evidence-based practices are essential in achieving the SDGs. By aligning with global market needs, promoting academic mobility, and fostering industry partnerships, HEIs can significantly contribute to the global sustainable development agenda.

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